



# Toxic Substances and Areas of Concern

*funded by the Great Lakes Restoration Initiative*

NOAA is working to confront toxics in the Great Lakes. While concentrations of some persistent toxic substances have been significantly reduced in the Great Lakes over the past 30 years, toxins such as polychlorinated biphenyls (PCBs) are still presently above levels considered safe for humans and wildlife, warranting fish consumption advisories in all five Great Lakes. In addition, chemicals of emerging concern, such as pharmaceuticals, are now being detected in the Great Lakes. NOAA is evaluating hazards from toxic substances so that regulatory and management responses can protect human and ecosystem health.



## Expanded Long-term Contaminant Modeling

NOAA's well-established Mussel Watch Program monitors the status

and trends of chemical contamination and associated effects in US coastal waters, including the Great Lakes. Mussel Watch involves the annual collection and analysis of mussels, which filter Great Lakes water, to provide an indication of local contamination levels. GLRI funds will expand monitoring in the Great Lakes to determine impacts of contaminant releases and to screen for contaminants of emerging concern.

## Modeling Atmospheric Mercury Deposition

Regional and global sources continue to deposit mercury to the Great Lakes via the air. Mercury can affect the human nervous system, fish, and wildlife. The most common way that people are exposed to mercury is by eating contaminated fish or shellfish. NOAA will use model output to determine the amount, source, and types of atmospheric mercury deposited in the Great Lakes. Project results will be used to develop an action plan to reduce mercury in the Great Lakes.

## Great Lakes Environmental Contamination Database

Making good decisions to improve the environment and human health requires high quality data. This project will compile sediment and wildlife contamination data from a variety of sources to improve NOAA's Query Manager database. This data will be analyzed and used to inform and expedite decision-making related to cleanup and restoration. NOAA will coordinate with and provide financial support to state partners.

## Lake Sturgeon Health Assessment

PCBs and dioxins have been linked to cancer and other serious health effects in animals and humans. Lake sturgeon were historically one of the most important fish in the Great Lakes. Today, they are listed by the state of Michigan as threatened, in part because PCB contamination affects their ability to reproduce. This project will determine the PCB threshold level that could affect early life stage survival. Results will be applied to the assessment, cleanup, and restoration of contaminated sites to improve habitat quality and fisheries in Areas of Concern and throughout the basin.



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